

cc: J. McGraw
L. Bunkich

PROJECT VARIANCE DATE: 12/17/85 AR NO.: 3808
CORPORATE ENGINEERING DEPARTMENT CEA NO: 3808
VARIANCE NO: 4

TITLE: Main South Trunk Sewer PROJECT SCOPE/PREMISES

LOCATION: W. G. Kruppich X EXECUTION

To: J. O. Bright - CS6G M. E. Nolan - FLEA
R. J. Geile - CS6G B. W. Steketee - 1740
L. C. Kreh - F2EC C. H. Thurman - B2SE
J. W. Molloy - 1740 R. L. Wiese - CS6G
R. L. Nelson - 1740

PROJECT SUMMARY

This project will install a new 42" diameter trunk sewer to carry all of the plant sewer load now carried by the two Sauget Village sewers at the south end of the plant.

DESCRIPTION

The following introductory paragraph clarifies the difference between this variance and the previous Variance #3.

Variance #3 addressed the extension to the Mechanical Completion date on this project which resulted in increased administrative costs (engineering and site administration costs) to Monsanto. This variance covers the additional costs that were incurred by the contractor, which were not identified and resolved at the time Variance #3 was issued. The reasons for the additional costs are basically the same for both variances.

This variance increases the Estimated Final Cost (EFC) on this project by \$200k because of costs incurred for the revised vitrified clay pipe joints which were required because the original material specified for the joints is no longer commercially available in the marketplace; for delays to construction execution caused mainly by contaminated soil problems and the need to maintain uninterrupted operation of several Plant Departments; and for additional shoring materials which provided the benefit of increased efficiency in construction execution. These costs were incurred by the contractor and will be added to the Guaranteed Maximum Price (GMP) contract.

APPROVAL: G. A. Grundmann 12/17/85
G. A. Grundmann Date
Project Manager

R. J. Geile 12/18/85
R. J. Geile Date

J. O. Bright 12/19/85
J. O. Bright Date
Director, NIC Engrg.

WGK 4084460

JUSTIFICATION

Following is a summary of the items which have increased the EFC on the project to \$5.4M.

1. Revised Joints: The material used for the joints on the vitrified clay pipe has been revised from the original specifications since the original materials are no longer commercially available in the marketplace. The contractor has worked very closely with Monsanto to develop the new joint procedures. In doing so, they have incurred some additional costs (+\$15k).
2. Delays to Construction Execution: During the execution of the project, progress has been delayed because of the following occurrences:
 - Work in the trench was shutdown and progress was delayed a number of days for safety reasons during benzene unloading and relocation operations.
 - Contaminated materials were uncovered at several locations during the trench excavation work. Work could not proceed in these areas during the investigation period and the subsequent cleanup of the contamination.
 - Because of the necessity of keeping the plant manufacturing in operation with as little interference as possible, additional costs were incurred. For example, at ACL, a culvert pipe was installed under the railroad tracks, sheet piling was placed next to the tracks, and caustic unloading facilities were added to insure continued plant operation without interference from construction.

(The additional cost of these delays to the construction execution was \$155k).
3. Shoring: Additional shoring was furnished beyond the limits specified in the original contract agreement. This has allowed more efficient and continued progress on the sewer work. (+\$30k).

FINANCIAL SUMMARY \$K

	<u>AR</u>	<u>EFC</u>	<u>THIS VARIANCE</u>	<u>NEW EFC</u>	<u>(OVER)/UNDER AR</u>
<u>CAPITAL</u>	5,000	5,200	200	5,400	(400)
<u>EXPENSE</u>	700	1,200	0	1,200	(500)

The estimated accuracy of this variance is +10%.

WGK 4084461

EXPENSE

No change.

EFFECT ON PROJECT SCHEDULE

None. The effects on the schedule were covered in Variance #3 and remain unchanged.

Gordon A. Grundmann
Project Manager

#2780C

WGK 4084462

VARIANCE DETAIL SHEET

CEA No. 3808

Title Main South Trunk Sewer

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Date 12/17/85

No.	CL*	Description	Amount \$k	EFC \$k	Date Initiated	Date Approved	Comment
1	1	Sewer routing revised.	0 C 0 E	5,000 C 700 E	9/13/83	9/25/83	
2	2	Documents Budget Estimate and revises completion date.	0 C 500 E	5,000 C 1,200 E	8/21/84	9/5/84	
3	2	Updates mechanical completion date for cost effective execution.	200 C 0 E	5,200 C 1,200 E	6/24/85	6/28/85	
4	2	Increases the EFC due to delays, joint materials, and shoring.	200 C 0 E	5,400 C 1,200 E	12/17/85		
			C E	C E			
			C E	C E			
			C E	C E			
			C E	C E			
			C E	C E			
			C E	C E			

*CL = Classification of Variances:
1 = Project Scope/Premises
2 = Execution

C = Capital
E = Expense

10361C

PROJECT VARIANCE

PRODUCT	COMPANY	PLANT
Utility	MIC	Krummrich

TOTAL VARIANCES SUMMARY INCLUDING THIS ONE

DESCRIPTION, JUSTIFICATION, EFFECT ON PROJECT SCHEDULE, COST.
<p>1. DESCRIPTION: The project involves the development of a new software application for data analysis.</p> <p>2. JUSTIFICATION: The application is needed to streamline data processing and reporting, reducing manual errors and increasing efficiency.</p> <p>3. EFFECT ON PROJECT SCHEDULE: The project is on track and will be completed by the scheduled deadline.</p> <p>4. COST: The estimated cost of the project is \$150,000, including development, testing, and deployment.</p>

WGK 4084464